



# Jocassee Journal

Information and News about the Jocassee Gorges



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A massive burnout operation of about 1,300 acres was initiated by helicopter at Table Rock Mountain and The Stool on Nov. 17. The controlled burn was undertaken to help bring the Pinnacle Mountain Fire under control. (SCDNR photo by Greg Lucas)

## Pinnacle Fire will have ‘long-lasting impacts’

### Jocassee land manager: Fire may result in long-term ecological improvements

By Mark Hall


The Pinnacle Fire will have long-lasting impacts on forest composition and wildlife habitat. In general, the fire will result in many positive ecological improvements because historically, fire played a critical role in the development and maintenance of the forest and plant communities across the Blue Ridge Escarpment.

The tragedy of the Pinnacle Fire is that it took place in an unplanned and uncontrolled fashion that threatened homes and personal property and also put the lives of fire management staff at risk in extremely treacherous terrain. The cost of the operation will likely approach \$5 million.

Drought and low fuel moisture presented ideal conditions for wildfire. Land managers in the area were on pins and needles every day for weeks hoping that wildfire would not occur, but then it happened. Once it was apparent the fire would grow to unknown proportions, S.C. Forestry Commission began the tedious process of planning with local land managers to make decisions and predictions on the best means of containing the fire that began as a few acres in a steep, rocky area laden with boulders. In the difficult, roadless area with poor access the prospects for containment were slim. Nonetheless, fire managers ultimately turned things around, established firebreaks and got things under control weeks later using controlled fire to fight wildfire. Mother Nature finally kicked in her assistance with rain and helped bring things to a halt, about 10,000 acres later.

Some of the oldest forestland in the area burned. Fire had largely been excluded for decades and the older woodlands contained hundreds of large, dead and semi-hollow trees. Those trees created a substantial threat to personnel in the field, as huge “snags” were dropping like flies as the fire passed. Older snags provide important habitat for the bears, squirrels, Eastern woodrat, songbirds, woodpeckers, reptiles and amphibians indigenous to the area.

All is not lost, however, as the fire will cause some trees to die and more snags will be present in the future. In addition, the fire will eliminate much of the mountain laurel and rhododendron that had encroached into dry habitats where those species do not belong ecologically. A flush of wildflowers and herbaceous vegetation will flourish on the forest floor in the coming years. In the future, more sunlight will penetrate the woodland canopy and reach forest floor as a result of the fire. The relatively “stagnant” forest will support vibrant plant communities that have not been present for almost a hundred years. Many animals in the area will find small seed-bearing plants, fruit-producing shrubs, grasses, forbs and a diversity of vegetation that cumulatively equate to better wildlife habitat.

Interestingly, the burned sites will offer unique opportunities for researchers to study the impact of fire on wildlife populations. For example, brook trout, ruffed grouse, Eastern woodrat are all species that evolved in fire-dependent ecosystems and are prime targets for research in post-fire conditions.   
*(Mark Hall is the land manager for SCDNR’s Jocassee Gorges. He is a Certified Wildlife Biologist and Registered Forester.)*

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Firefighters (from left) Ken Forrester and Mark Hall of the S.C. Department of Natural Resources and Henry Hutto and Trey Cox of the S.C. Forestry Commission pause along a burned-over area along the Foothills Trail on Pinnacle Mountain during the first week of the Pinnacle Mountain Fire. (SCDNR photo by Greg Lucas)

# Mountain forests will recover, scientists say

Continued from page 1

## Outpouring of support from community ‘unprecedented,’ say firefighters

The Pinnacle Mountain Fire burned more than 10,623 acres in the South Carolina mountains, including about 1,500 acres of Jocassee Gorges lands. Officials with the S.C. Forestry Commission and the Pinnacle Mountain Wildfire Joint Information Center officially declared the fire “100 percent contained” on Dec. 5, 2016.

The decision to declare the fire 100 percent contained followed heavy rainfall that moved through the area during the first week of December.

The effort to contain the wildfire, which started with a wayward campfire Nov. 9 on the Foothills Trail on Pinnacle Mountain, was spearheaded initially by the S.C. Forestry Commission and Holly Springs Fire Department and involved scores of firefighters, National Guard helicopters, numerous state and federal agencies and local fire departments from across South Carolina.

The outpouring of support from local residents near the fire was “unprecedented,” said firefighters on the scene. Volunteers cooked meals around the clock for firefighters, which at times numbered nearly 300. Donations of water, food and supplies poured into local fire departments and were received with gladness by the firefighting community.

Persistent drought, high winds and a surplus of dry fuel on Pinnacle Mountain combined to make this one of the biggest fires in South Carolina history.

Around 100 residents north of SC 11 were evacuated from their homes at one point, when firefighters undertook a massive burnout of 1,300 acres in Table Rock State Park and the Greenville Watershed to deprive the wildfire of fuel and to attempt to bring it under control.

The Pickens County Council declared a State of Emergency Nov. 16, one week after the blaze started spreading over much of Table Rock State Park in the northern part of Pickens County.

Now that the fire is contained, crews moved into a new phase of operations that are focusing on stabilizing firebreaks constructed during the height of the fire’s spread. Local S.C. Forestry Commission employees, along with employees from the S.C. Department of Natural Resources (SCDNR), Greenville Water System and Table Rock State Park, met to discuss the implementation of forestry Best Management Practices (BMPs). These practices are carried out to help reduce erosion that may have occurred during fire suppression activities.

Methods used to reduce such impact will primarily include constructing water turnouts, planting grass seed and cleaning out stream crossings to restore the natural flow of water. These practices will be implemented primarily on the interior roads and the more than 31 miles of firelines that encompass the fire.

The estimated cost for the Pinnacle Mountain Fire is \$4.8 million. This estimate was made Dec. 5. No injuries were reported during the fire. ❁





The elk that wandered from North Carolina into South Carolina, known affectionately by Upstate residents as "Rocky" and "Elky," was quite a hit at golf courses in Pickens and Oconee counties, where the animal seemed to pause for well-watered and fertilized forage grasses. SCDNR officials are still asking the public not to feed or approach the elk, in hopes that it will eventually return to the North Carolina herd.

## Displaced elk returned to South Carolina mountains, but still wandering

### Biologists are hoping wayward elk will return to North Carolina

With the help of the N.C. Wildlife Resources Commission, the S.C. Department of Natural Resources (SCDNR) tranquilized the Upstate's displaced elk the evening of Nov. 17 and successfully moved it to a remote area in the South Carolina mountains. However, as of Nov. 23, the elk had moved south into Oconee County.

The young male elk is believed to have meandered into Pickens County in late October after being pushed out of an elk herd in Haywood County, N.C., by a dominant bull elk.


After being seen in numerous locations around Pickens County, some them around the cities of Liberty and Easley, SCDNR caught up with the elk on White Horse Road in Greenville County and rescued the animal from a potentially perilous encounter with urban traffic. When the elk was tranquilized, its antlers were removed.

Biologists hope that once the elk realizes there

are no female elk in the area, it will return to North Carolina and rejoin its herd.

"If anyone sees the elk, please do not attempt to feed or touch it," said Tammy Wactor, SCDNR wildlife biologist. "When people approach the elk or try to feed it, it can affect the elk's behavior and travel patterns. And it also has the potential to create public safety issues."

Reintroduction of elk into Great Smoky Mountains National Park began in 2001. The elk population around the Great Smoky Mountains is estimated to be around 150, and there have been numerous unconfirmed sightings in the South Carolina Upstate in recent years. Elk vanished from the southern Appalachians in the late 1700s due to overhunting and loss of habitat, and this is the first one confirmed to have come to South Carolina since then.

Legislation protecting elk in the Palmetto State was passed by the S.C. General Assembly. That legislation was promoted by the Rocky Mountain Elk Foundation in anticipation of elk migrating to South Carolina. 



An Eastern spotted skunk is captured by a remote-camera survey underway on public lands in upstate South Carolina. (Photo courtesy of Robin Eng)

## A ‘cryptic’ species, the Eastern spotted skunk persists in the Forests of Upstate S.C.

Research seeks to answer question: Are these animals rare, or just rarely seen?

By Robin Eng

While many people are familiar with the striped skunk (*Memphitis memphitis*), a cat-sized, dual-striped, ambling black and white mammal, fewer are aware of the presence of a second, smaller, skunk species that forages the forest floors under the cover of nightfall in upstate South Carolina.

Eastern spotted skunks (*Spilogale putorius*) are squirrel-sized memphitidae, also black and white, but with a bushy white-tipped tail and four broken stripes (or “spots”) that extend the length of their body. These skunks were once abundant throughout the eastern United States, the value of their pelts for the fur industry resulting in harvests of over 100,000 each year. In the middle of the 20th Century, however, the population crashed to as little as 1 percent of those historic rates. Sightings dropped off in South Carolina, and owing to a complete absence of reported sightings from 1987 until 2015, many considered the species to be locally extinct.


In 2015, efforts of student researchers at Clemson University resulted in five spotted skunk detections in the Andrew Pickens ranger district of Sumter National Forest,

and further studies are now underway to learn more about the persisting Eastern spotted skunk population in the upstate of South Carolina. In the winter months, extensive remote-camera surveys are being performed to assess the range of area occupied by spotted skunks on public lands in upstate South Carolina, as well as in nearby national forests in North Carolina and Georgia. Additionally, in 2016 we have begun trapping efforts and placed radio-collars on a handful of spotted skunks, which are being tracked to their

daytime resting sites and providing novel information about spotted skunk habitat selection and ecology in the region.

These studies will provide answers not only to the question of whether spotted skunks in South Carolina are truly rare, or simply cryptic in nature (cryptic meaning, in a biological sense,

concealed or camouflaged) but will also provide novel information to be used by conservation biologists and land managers, in assessing and maintaining the productivity and diversity of South Carolina’s Blue Ridge forests.

Have you seen an Eastern spotted skunk near you? Report photos and sightings at [www.inaturalist.org/taxa/41882](http://www.inaturalist.org/taxa/41882). 

*(Robin Eng is a Master’s of Science student at Clemson University who is leading the spotted skunk research in South Carolina.)*



# Pond at Oconee Bell Nature Trail built by Jocassee Valley native

## Builder was a member of Civilian Conservation Corps at Table Rock

By Delores Stansell Pearson

As a child Jocassee Valley was my playground. My grandparents, Dick and Winnie Stansell, lived where the old covered bridge crossed Keowee River. My father, Kenneth Stansell, grew up in that beautiful valley. He was a member of the Civilian Conservation Corps located at Table Rock. It was there that he became a very proficient stonemason. Serving as an Army medic in World War II, he was awarded a Purple Heart and Bronze Star. Upon returning home he went to work for Sloan Construction Company building roads. This occupation provided him the opportunity to use heavy equipment and do grading.

Around 1950, he bought 100 acres of land close to the original location of Mount Carmel Baptist Church. After surveying the land, he decided on the best place to create a fishing pond. Borrowing equipment from his work, he graded an area over 2 acres and built an earthen dam. Even though I was a young girl, Dad did not hesitate to teach me some of his skills. At the age of eight I helped him build the spillway beside the dam.

As I recall, there were three creeks and a spring that fed the pond. It took several months to reach full pool. Once filled, Dad stocked it with fish. He brought some from North Carolina while the rest were from hatcheries in upstate South Carolina. Once finished, he built a cabin at the far end. And yes, I helped build the cabin also, or at least as much as an 8-year-old could help. There was a porch that extended over one of the creeks from which you could fish. The spring provided our drinking water. Due to Dad's work, we moved to wherever his road project was located so this cabin became a weekend retreat not only for us but for our



Kenneth Stansell



The pond begins filling up in February 1951. (Photos courtesy of Delores Stansell Pearson)

extended family. Many happy days were spent canoeing, fishing, swimming, frog-gigging and just enjoying the mountains.

Dad sold the land in 1959. When the state decided to develop a nature trail there, Dad helped lay out the walk. He passed away in 2010, but the beauty of Jocassee Valley lives on in his beloved pond and the rare Oconee Bell flowers from which the trail is named. *(Delores Stansell Pearson says, "After moving from South Carolina and living in Pennsylvania and Michigan, my husband and I have retired to north Georgia. While I have enjoyed living in several different areas, I still consider the Jocassee Valley my HOME!")*



The author, at age 9, swimming in the pond in August 1952.



# Hollowed into a S.C. mountain 25 years ago, engineering wonder Bad Creek hydro plant supplies power to 850,000 homes

Against gently sloping mountains and soothing sapphire-blue waters, Duke Energy blasted through tons of granite to carve a modern-day wonder.

Hollowed into the side of a mountain in northwest South Carolina, it resembles James Bond villain Dr. No's underground lair. But Bad Creek Hydroelectric Station near Salem, S.C., about 140 miles southwest of Charlotte, is actually a power plant with the ability to supply about 850,000 homes with energy on short notice.

It's a plant that has intrigued sightseers since 1991.

This year, Bad Creek celebrated its 25th anniversary with a private ceremony on Sept. 8. Duke Energy is also looking toward the future by upgrading the units. When the planned upgrades are complete in 2023, the plant will be able to power a million homes.

## An intelligent design

The plant's location is perhaps its most intriguing aspect, just steps away from Lake Jocassee in the foothills of the Blue Ridge Mountains. Winding, twisting roads lead to the site, which is secluded and surrounded by public land. Access is restricted inside the mountain, though public tours were given years ago.

"It sits below Lake Jocassee buried inside a mountain," Station Manager Preston Pierce said. "The rustic part is, you really can't tell that it's there."

Why is the plant in a mountain? It's a matter of engineering.

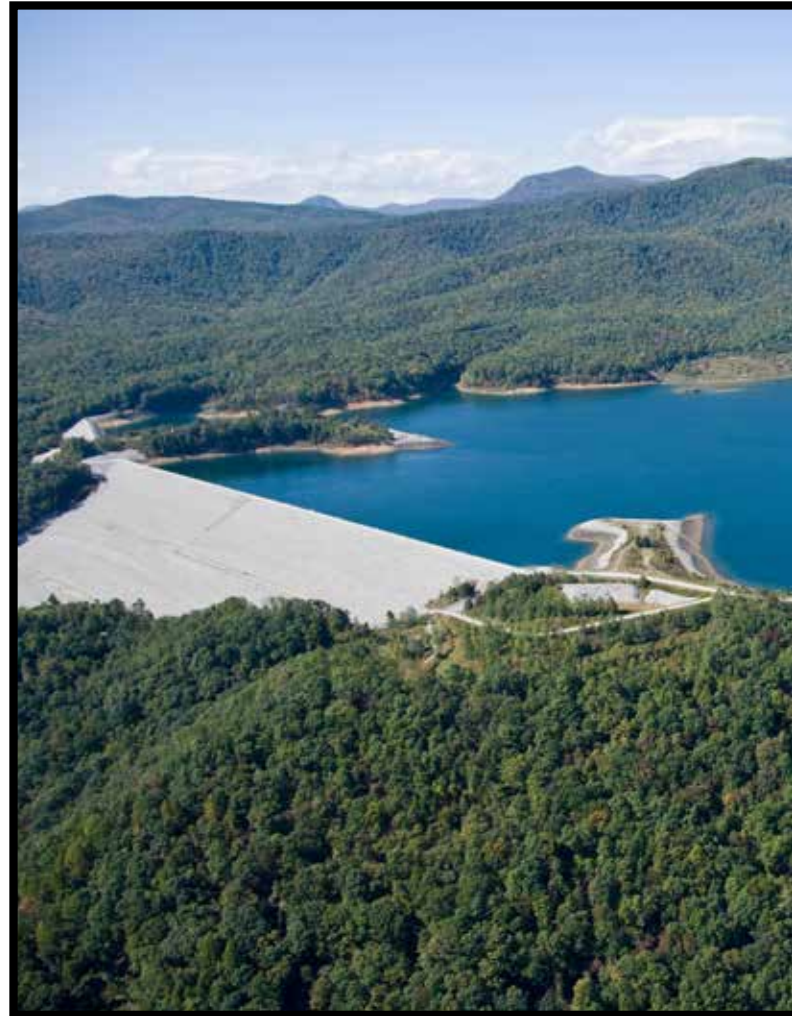
The plant's pumped-storage design dictated the mountainside location. For the design to be most efficient, the powerhouse had to be located a certain distance below the reservoir.

Just like any hydroelectric station, Bad Creek uses the flow of water to produce electricity. During times of peak demand, water is released from the Bad Creek Reservoir at the top of the mountain through a concrete tunnel that travels nearly three quarters of a mile to the underground



Inside the Bad Creek powerhouse, which is about 70 feet longer than a football field.

# The marvel in



**The Bad Creek upper reservoir stores water to be released when (Duke Energy)**

powerhouse. The water then spins huge turbine generators to produce electricity.

Because about 1,200 feet separate the reservoir and the lake, Bad Creek is able to take advantage of gravity to produce more electricity.

As a pumped-storage hydroelectric station, Bad Creek differs from traditional hydropower because when energy demand is low, the plant uses excess energy from other plants to power the turbines to pump water from Lake Jocassee to the reservoir at the top of the mountain.

It works like a battery – the water is stored and easily accessed by releasing the water down the mountain when customers need energy the most. Pumped-storage plants like Bad Creek account for 97 percent of the United States' energy storage according to the National Hydropower Association.

Having pumped storage available, the U.S. Department of Energy's Vision Report said, could help integrate renewables by being able to produce and consume power quickly when solar and wind energy production varies.



# the mountain!



energy demand is at its highest. (Photos courtesy of Duke

There are 40 pumped-storage hydropower plants in the United States and, according to the National Hydropower Association, about 270 in the world. Bad Creek is one of the newer plants. Its construction took roughly 10 years and cost \$1 billion – it was finished one year ahead of schedule and \$90 million under budget when it opened in 1991.

Richard Miller, Duke Energy communications operations manager, helped build the plant and said he hadn't seen such a massive entrance tunnel before. The entrance slices through a chunk of solid granite and is large enough for a city bus to enter.

Even more interesting than the entrance tunnel, Miller said, was the powerhouse cavern, which houses the turbines and generators that power the plant.

"The wow factor behind Bad Creek was how deep it was into the mountain and how big that powerhouse cavern was," Miller said.

It was so spacious that the tallest building between Charlotte, N.C., and Atlanta, the 25-story Daniel Building in Greenville, S.C., could fit horizontally inside it and still have a

little wiggle room.

Though the floors are roomy, overhead lighting sometimes casts a yellow tint, creating a cavern-like feel.

"It's literally a cave," Pierce said. "A lot of the walls are rock or concrete because it was chiseled out of a mountain."

Monstrous machinery fills the space and vibrates the floors of the plant, which is cooled to compensate for the warmth of the machines. Miles and miles of pipe snake along the rough, deeply pocked and fissured walls like a maze.

Water routinely drips from the jagged walls, and a safety net hangs from the vaulted ceiling to catch any stray rocks. For safety's sake, equipment was installed to provide a cellphone signal strong enough to cut through 600 feet of rock.

## The surrounding beauty

The engineering wizardry of the plant often takes a back seat to the spectacular background scenery--which is how planners wanted it.

"Even during construction," Miller said, "you could be hiking, fishing or camping and not even know it's there."

A day of boating on the pristine waters of Lake Jocassee can take your breath – and your words – away, leaving only tranquility and reverence. Fall is spectacular, with the trees painting the hillsides fiery red, serene green and pumpkin orange. The season wraps a cloak of color around misty waterfalls and rugged gorges.

As part of the construction, Duke Energy built 43 miles of the Foothills Trail where the Bad Creek Warehouse is near one of a dozen trail entry points. Pierce said it's well used, and hikers might spot black bears, deer, turkeys, hogs and snakes.

It's an outdoor office to Allan Boggs, a compliance supervisor based at Bad Creek. As part of his job, he often spends time outdoors on the water. Boggs considers Bad Creek worthy of the awe it's received over the years and said it will always hold a special place with him.

"It's a wonderful place to live and work," he said.

"It's paradise." ❁

*(This story, written by Shirley Moore, first appeared on the Duke Energy Illumination website.)*



Bad Creek Station Manager Preston Pierce walks through the plant's entrance tunnel, which is large enough for a city bus to pass through.



The new license for Duke Energy's Keowee-Toxaway Hydroelectric Project, which includes lakes Jocassee and Keowee, represents a culmination of nearly a decade of collaboration among governmental and community stakeholders. (Photo courtesy of Duke Energy)

# Duke Energy receives new operating license for Keowee-Toxaway Project

## Numerous recreational improvements scheduled on lakes Keowee, Jocassee

On Aug. 16, 2016, the Federal Energy Regulatory Commission (FERC) issued a new 30-year operating license for Duke Energy's Keowee-Toxaway Hydroelectric Project, which allows the company to continue operating the Jocassee Pumped Storage Hydro Station, Keowee Hydro Station and associated lakes.

"The project provides clean, renewable hydroelectric power generation, supports regional public drinking water needs and provides high-quality recreational opportunities for the region," said Steve Jester, Duke Energy's vice president of water strategy, hydro licensing and lake services. "This license ensures the availability of these resources for future generations."

The Keowee-Toxaway Hydroelectric Project begins with Lake Jocassee in North Carolina and South Carolina. It flows into Lake Keowee then downstream to the Army Corps of Engineers' Lake Hartwell Project.

The Keowee-Toxaway project is made up of two reservoirs with two powerhouses, spans approximately 25 river miles and encompasses approximately 480 miles of shoreline. It provides 868 megawatts of hydropower generation and cooling water for Oconee Nuclear Station, which has the capacity to generate approximately 2,500 megawatts of energy.

The new license took effect Sept. 1, 2016, and represents a culmination of nearly a decade of collaboration among governmental and community stakeholders.

"Receiving the license allows us to implement operational, environmental and recreational resource


enhancements that will result in many benefits to the community and the environment for decades to come," Jester said.

These benefits include enhancements to public recreational areas on Lake Jocassee and Lake Keowee. Proposals in the recreation management plan include adding diver access, a new courtesy dock, a new boat and trailer docking area, access for non-motorized boating and bank fishing signs at Devil's Fork State Park. Duke Energy will also add about 25 acres to Double Springs Campground and build new restrooms and 12 new campsites.

At Lake Keowee, Duke Energy will build new parking areas at three recreation sites, build new trails, add bank fishing signs and add new campsites, fishing stations and 10 cabins at Mile Creek County Park. The company will build a canoe/kayak launch, fishing pier, and portage at 15-acre Lake, a recreation site at Keowee-Toxaway State Park.

The company will also implement a Habitat Enhancement Program in the watershed and conserve approximately 2,900 acres of property adjoining the lakes to preserve and protect ecologically and culturally significant resources.

The project was originally licensed in 1966 for 50 years. The license application evaluated the impacts of Duke Energy's operation during the new license term and includes a relicensing agreement signed by Duke Energy and 16 other stakeholder organizations.

The license also includes a new operating agreement Duke Energy negotiated with the Army Corps of Engineers and the Southeastern Power Administration to improve operational coordination between Duke Energy's project and Army Corps of Engineers' projects downstream. 





# 2016 mountain bear harvest totals 47 animals

## Drought, bountiful acorn crop makes it more difficult for hunters

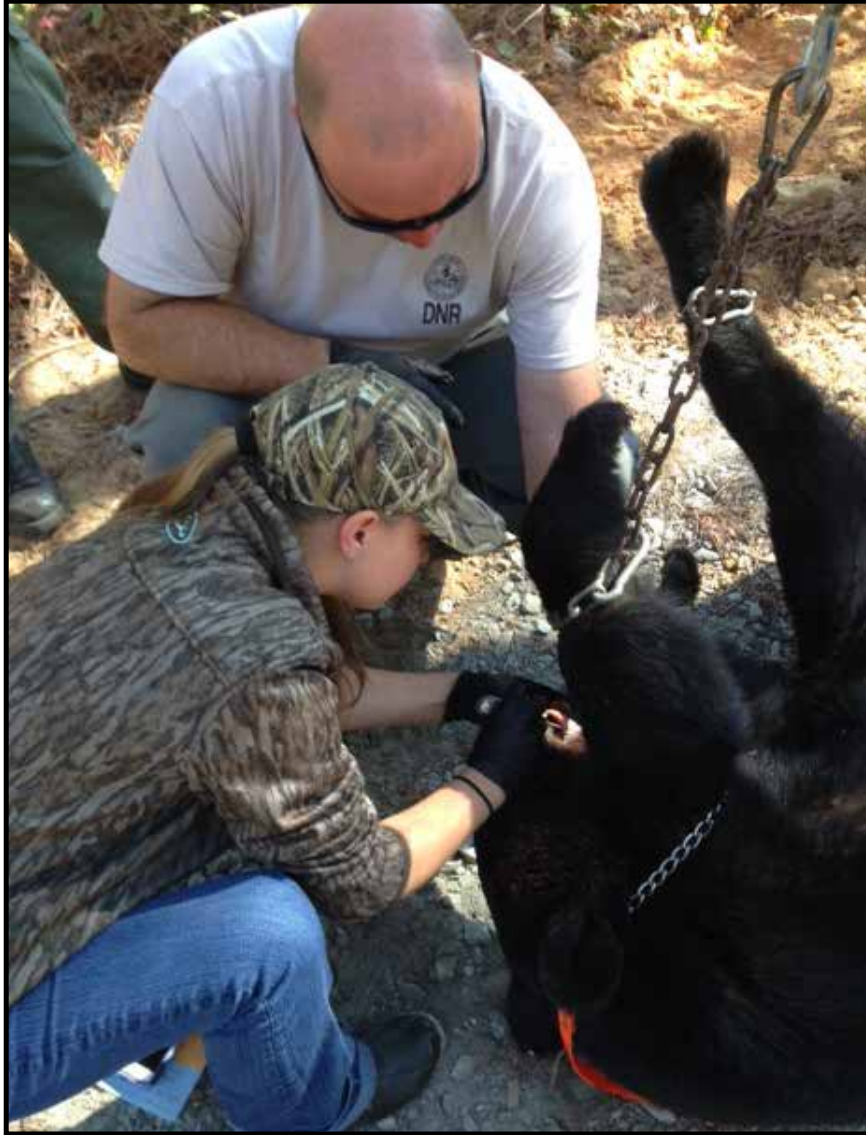
A bountiful acorn crop in 2016 and dry conditions brought on by the severe drought in the South Carolina mountains resulted in about half the black bears being taken by hunters compared to 2015 during the two-week season in October.

A total of 47 bears were harvested in the South Carolina mountains in 2016. Pickens County led the bear harvest with 26 animals, followed by Oconee County with 12 and Greenville County with 9. Last year's harvest was 92 black bears.

"There were acorns everywhere in the mountains this fall, so the bears had no reason to move, making them difficult to hunt," said Tammy Wactor, black bear biologist with the S.C. Department of Natural Resources. "The white oak acorns, which black bears prefer, were especially abundant this year. Also, it was so dry during the dog season, because of the drought, that it was very hard for dogs to pick up on bear scent, so that's another reason for the lower harvest numbers."

The two-week black bear season in the South Carolina mountains, typically the last two weeks in October, is divided into two parts. The first week is a still-hunt season, when dogs are not allowed and hunters rely on stealth and scouting to find bears. The limit during the still hunt is one bear, no sow with cubs, and no bears 100 pounds or less. The second week is the

party dog hunts, where groups of up to 25 people hunt bears with dogs. The limit during the dog hunts is five bears per party, no sow with cubs, and no bears 100 pounds or less.



**Ken Forrester, SCDNR wildlife technician, and Clemson wildlife student volunteer Kayla Sloan check in a harvested bear at Jocassee check station. They were collecting biological data to get a better understanding of the Upstate black bear population. (SCDNR photo by Tammy Wactor)**

In 2016, 18 bears were harvested during the still hunts, 29 during the dog hunts. Over the past 47 years, the bear harvest has averaged about 21 bears per year. However, in the past decade, since 2006, the average harvest has been 77 bears per year. Wactor attributes the increase in the bear harvest in the past 10 years to an expansion in the black bear population in South Carolina's mountains, both in range and in numbers.

Black bears can be found throughout North America. In South Carolina, there are two resident populations of black bears, one in the mountains and upper piedmont and one in the coastal plain.

Home range for bears must include den sites, food, water and cover for adults and young. Typically male bear home ranges can be 18 to 160 square miles, while home

ranges for females are smaller, around 6-19 square miles. A shortage of natural food sources and lack of rainfall can cause home ranges to vary greatly. Black bears will travel large distances to find adequate food sources. In addition, juvenile bears, especially the males, must disperse to find new home territories. Dispersing juvenile bears have been sighted in many counties in South Carolina. These bears are usually transient and do not stay in the area for long. ❁

# Forest changes studied in Jocassee Gorges between 2001 and 2016

Student who did groundbreaking research in 2001 returns for another look  
By Scott Abella

In 2001, I had the opportunity to work with Dr. Victor Shelburne for a master's degree in Forestry at Clemson University. My project was exciting: conducting an ecological inventory of the diversity of soils, understory plants, and trees to develop an ecological classification of the forest ecosystems inhabiting the Jocassee Gorges. Through this effort, 48 measurement plots that were each a quarter acre in size (about one-fifth the size of a football field) were established across Jocassee Gorges in 2001.

Collaboratively with the S.C. Department of Natural Resources (SCDNR) and the Foothills Trail Conference, in July 2016 I re-measured 11 of the original 2001 plots. Focus was on hemlock forests, as the plots were established just before the arrival to Jocassee Gorges of the non-native pest hemlock woolly adelgid. This Japanese pest has been decimating hemlock forests in North America, where hemlock trees have little to no resistance.

Between 2001 and 2016, hemlock forests in Jocassee Gorges changed drastically. On the plots, 90 percent of hemlock trees of all sizes are now dead. Remaining hemlocks appear in severe decline. When these types of ecological events occur, we should examine the positive and negatives. On the positive side, the plots have more understory plants in 2016 than they did in 2001. This is likely partly because hemlock trees are no longer shading out plants on the forest floor. In some plots, blackberry now predominates, while in others, rhododendron or other species. On the negative side, the landscape has lost an ecosystem, one that was unique. Most sites now only contain deciduous trees, which do not shade streams and the forest floor during all of the year. Also, even deciduous trees are less abundant now in these locations, probably partly because of strong winds and large hemlocks taking down other trees when they fall.

Seeing how much these areas changed since



**This set of photos shows Virginia Hawkins Falls in 2001 (top) and 2016 (bottom). The 2016 photo is after major mortality of Eastern hemlock trees. (Photos courtesy of Scott Abella)**

*"Between 2001 and 2016, hemlock forests in Jocassee Gorges changed drastically. On the plots, 90 percent of hemlock trees of all sizes are now dead."*

— Scott Abella, Jocassee researcher

2001 was shocking. It is rare to have photos and detailed information available before an unplanned event like a biological invasion. While some management

strategies exist to partly ameliorate damage in hemlock forests, this is a challenging situation for management. The 2016 remeasurement can help provide

information on at least the nature of the changes. I am grateful to SCDNR for the opportunity to work in Jocassee Gorges, and we plan on continuing to analyze the data set and the more than 40 repeat photos. 🍂

(Scott Abella, an assistant professor of restoration ecology at the University of Nevada Las Vegas, can be reached at [scott.abella@unlv.edu](mailto:scott.abella@unlv.edu).)





Mountain bikes and horseback riders have access to many miles of roads within Jocassee Gorges that are closed to motorized vehicles. (SCDNR photo by Phillip Jones)

## Mountain bikers, horses welcome on Jocassee lands

Horse, bike use permitted on roads  
that are closed to motorized traffic

By Mark Hall

Mountain bikes and horses may be used on about 100 miles of main access and limited-use roads in Jocassee Gorges.

Maps posted at the main entrances to Jocassee Gorges indicate the road locations. The S.C. Department of Natural Resources (SCDNR) has spent considerable time and resources maintaining roads in various conditions to sustain different levels of uses—from horseback riding to hiking to mountain biking. SCDNR will continue to reclaim old roads to allow them to be used for many different types of recreation.

SCDNR is dedicated to stewardship and careful management of the natural resources found on Jocassee Gorges and faces a difficult balancing act when allowing as many recreational activities as possible without detriment to the resources. Some people would prefer to close all roads to all sorts of traffic other than hiking.

Support of the “essential character” of the land drives management decisions for both resources and recreational activities on Jocassee Gorges.

The Palmetto Trail passes through a section of Jocassee Gorges that has perhaps the highest density of Outstanding Resource Water (ORW) streams found in South Carolina. Thus, mountain bikes are prohibited on the trail in that area. Many portions of the Palmetto Trail in Jocassee Gorges are not designed for and will not sustain mountain bike traffic. The Palmetto Trail is in fairly good condition for hiking, and that is a customary, low-impact use of the area.

Equestrian and mountain bike use is permitted on 70 or more miles of the open roads and roads closed to motorized traffic. SCDNR monitors all uses and thus far, has not had to prohibit any activities. SCDNR will continue to manage the diverse biological resources in Jocassee Gorges for current and future generations to enjoy. It is a tough balancing act. 🌿

*(Mark Hall is the land manager for SCDNR's Jocassee Gorges. He is a Certified Wildlife Biologist and Registered Forester.)*



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# Sassafras Mountain project delayed until 2017

## Highest point in South Carolina to be location of viewing tower

Construction of the observation tower atop South Carolina's highest point on Sassafras Mountain is expected to get underway in spring 2017.

Officials with the S.C. Department of Natural Resources (SCDNR) had hoped construction might begin in September or October 2016, but paperwork delays and the arrival of cold weather at the top of the 3,553-foot peak pushed construction into 2017.

"It will be 2017 before the Sassafras project gets underway," said Tom Swaynham, assistant chief of wildlife with SCDNR.


"Concrete can't be poured up there once it gets cold, so we are looking at spring 2017."

Funding for the first phase of construction on the 15-foot tower has come from a variety of sources, including Duke Energy, the Harry Hampton

Memorial Wildlife Fund, and from commemorative brick sales. The first phase is scheduled to include the observation tower at the summit of the mountain, and restrooms.

The current wooden viewing platform, built near the Sassafras Mountain parking lot by Clemson University architectural students, will remain in place as an auxiliary deck. It provides a view to the west and south, looking into North Carolina and Georgia.

Phase Two of the project, which will require additional funding, is scheduled to include a picnic area, accessory trails, informational kiosks and improvements to the parking lot.

Sassafras Mountain sits on the South Carolina and North Carolina border, about 20 miles north of Pickens. It can be accessed by vehicle from the F. Van Clayton Highway in Rocky Bottom, and through the Foothills Trail ([www.foothillstrail.org](http://www.foothillstrail.org)), a 77-mile footpath between Table Rock and Oconee state parks. 

*"Concrete can't be poured up there once it gets cold, so we are looking at spring 2017."*

— Tom Swaynham, SCDNR